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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,902	05/26/2006	Midorikawa Yukinori	12400-079	1277

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EXAMINER
HAUGLAND, SCOTT J

ART UNIT	PAPER NUMBER
3654	

MAIL DATE	DELIVERY MODE
03/23/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/580,902	YUKINORI ET AL.	
	Examiner	Art Unit	
	SCOTT HAUGLAND	3654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14 and 16-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14 and 16-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/21/10 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-14 and 16-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1 and 7 include new matter because there is no disclosure in the application as originally filed that the preset torque setting is capable of positioning the seat belt as recited in claim 1, lines 37-38 and claim 7, lines 38-39.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-14 and 16-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the preset torque setting" on line 37. There is insufficient antecedent basis for this limitation in the claim.

It appears that the preset torque setting of claim 4, line 2 refers to the same feature as that in claim 1, line 37.

It appears that "a predetermined" in claim 4, line 3, should be --the predetermined--.

Claim 7 recites the limitation "the preset torque setting" on line 38. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 16, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al (U.S. Pat. Appl. Pub. No. 2002/0189880) in view of Yano et al (U.S. Pat. No. 6,499,554).

Tanaka et al discloses a retractor for a seat belt system for a vehicle comprising: a spindle 4 on which a webbing is wound, a frame 2 for pivotally holding the spindle, and a first torque generating system 14 including spiral spring 54 which generates a predetermined torque (there is no structural difference between the first torque generating systems of Tanaka and applicants' apparatus; Tanaka is capable of the same operation) to rotate the spindle in a winding direction in which the webbing is wound and connected to the spindle at all times so as to transmit the generated torque to the spindle, a second torque generating system (motor 10) which generates torque to rotate the spindle in the winding direction, and a torque transmitting mechanism system 5 which transmits the torque generated by the second torque generating system to the spindle. The torque transmitting mechanism system 5 does not transmit torque generated by the second torque generating system to the spindle when the second torque generating system generates torque for rotating the spindle in the seatbelt unwinding direction (abstract, par. 68). The second torque generating system generates a torque in the unwinding direction after winding the belt to put the torque transmitting mechanism system into a state in which the second torque generating

system does not transmit torque to the spindle to prevent interference with the normal operation of the spindle (Fig. 6). The first torque generating system (spring unit 14) produces a predetermined torque at a point in the process of winding the seatbelt onto the spindle that is so low that the first torque generating system is incapable of winding the seatbelt onto spindle 4 by itself (par. 40; dashed line in Fig. 6). The second torque generating system (motor 10) has a significantly higher torque generating capability to ensure that the seat belt is wound when necessary. A seat belt fastening state detecting system is incorporated into a buckle (e.g., claim 1, lines 4-6 of Tanaka et al).

Tanaka et al does not explicitly disclose that the control system controls the torque generated by the second torque generating system according to a dangerous state.

Yano et al teaches controlling the torque of a motor 10 (second torque generating system) for winding a seat belt according to a dangerous state of a vehicle (col. 27, lines 17-25).

Assuming, arguendo, that Tanaka et al does not disclose that the retractor includes the spindle locking system in the related patent to Yano et al, Yano et al teaches providing a seatbelt retractor of the type in Tanaka et al with a spindle locking system means (6,8) for preventing the webbing from drawing that stops rotation of the spindle rotating in a webbing drawing out direction when a rotational acceleration of the spindle is greater than a first predetermined value when the webbing is accelerated in the drawing out direction and stops rotation of the spindle rotating in the drawing out

direction when a deceleration of the vehicle is greater than a second predetermined value.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the retractor of Tanaka et al with a spindle locking system means for preventing the webbing from drawing that stops rotation of the spindle rotating in a webbing drawing out direction when a rotational acceleration of the spindle is greater than a first predetermined value when the webbing is accelerated in the drawing out direction and stops rotation of the spindle rotating in the drawing out direction when a deceleration of the vehicle is greater than a second predetermined value as taught by Yano et al to restrain a wearer of the seat belt during a vehicle emergency.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the control system of Tanaka et al control the torque of the motor (second torque generating system) according to a dangerous state of a vehicle as taught by Yano et al to safely secure a vehicle occupant without requiring additional components.

The retractor of Tanaka et al as modified appears to be capable of the intended use (the torque generated by the first torque generating system (spring) is set lower than the torque generated by the second torque generating system (motor) when each are transmitted to the spindle) recited in claim 1, lines 33-35 and claim 7, lines 32-36 because the torque required for securing an occupant in an emergency would be significantly higher than the torque generated by a spring that is incapable of fully

winding the seatbelt. Assuming, arguendo, that the torque of the first torque generating system is not lower than that generated by the second torque generating system, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the retractor of Tanaka et al as modified capable of generating a greater torque than the spring to allow for the case in which the spring is in or near a state of failure to ensure that the seat belt is wound when required and to be capable of restraining an occupant in an emergency.

The torque of the first torque generating system of the retractor of Tanaka et al as modified would be capable of restricting a passenger without causing an oppressive sensation as required by claim 1, lines 35-29 and claim 7, lines 36-40 due at least to its inability to wind the belt beyond a certain point.

With regard to claim 20, the rotary speed of the spindle would inherently increase with time as torque is applied by the drive motor 10.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al in view of Yano et al as applied to claim 1 above, and further in view of Peter (U.S. Pat. No. 2003/0201359).

Tanaka et al does not disclose a torque transmission cushioning system for cushioning a torque transmission by an elastic member arranged between the second torque generating system and the spindle.

Peter teaches a torque transmission cushioning system for cushioning a torque transmission by an elastic member 28 arranged between a torque generating system 36 and a belt spindle 12.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the retractor of Tanaka et al with a torque transmission cushioning system for cushioning a torque transmission by an elastic member arranged between the second torque generating system and the belt spindle as taught by Peter to simplify the spindle acceleration responsive locking mechanism.

With regard to claim 6, it would have been obvious to make an elastic force of the elastic member in the power transmission cushioning system when substantially compressed larger than the force generated at the same point by the first torque generating system to prevent false triggering of the associated locking mechanism.

Claims 7-13, 18, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al in view of Yano et al and Fujii et al (U.S. Pat. No. 6,427,935).

Tanaka et al is described above.

Assuming, arguendo, that Tanaka et al does not disclose that the retractor includes the spindle locking system in the related patent to Yano et al, Yano et al teaches providing a seatbelt retractor of the type in Tanaka et al with a spindle locking system means (6,8) for preventing the webbing from drawing that stops rotation of the spindle rotating in a webbing drawing out direction when a rotational acceleration of the

spindle is greater than a first predetermined value when the webbing is accelerated in the drawing out direction and stops rotation of the spindle rotating in the drawing out direction when a deceleration of the vehicle is greater than a second predetermined value.

Tanaka et al does not disclose a webbing action detecting system for detecting whether the webbing is drawn out, the webbing is wound, or the webbing is in a stopping state or a control system for controlling the torque of the second torque generating system according to an action of the webbing detected by the webbing action detecting system.

Fujii et al teaches providing a seat belt retractor with a webbing action detecting system (40, 50) for detecting whether the webbing is drawn out, the webbing is wound, or the webbing is in a stopping state. Rotation detecting unit 50 of the webbing action detecting system detects rotary speed and direction of the spindle by detecting variation in rotary position of the spindle (which is a speed). The speed is used at least to the extent that a finite or zero speed is detected (to detect stoppage). A control system (Fig. 16) for controlling the torque of the second torque generating system according to an action of the webbing detected by the webbing action detecting system.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the retractor of Tanaka et al with a spindle locking system means for preventing the webbing from drawing that stops rotation of the spindle rotating in a webbing drawing out direction when a rotational acceleration of the spindle is greater than a first predetermined value when the webbing is accelerated in

the drawing out direction and stops rotation of the spindle rotating in the drawing out direction when a deceleration of the vehicle is greater than a second predetermined value as taught by Yano et al to restrain a wearer of the seat belt during a vehicle emergency.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the retractor of Tanaka et al with a webbing action detecting system for detecting whether the webbing is drawn out, the webbing is wound, or the webbing is in a stopping state by detecting a rotary speed and a rotary direction of the spindle and with a control system for controlling the torque of the second torque generating system according to an action of the webbing detected by the webbing action detecting system as taught by Fujii et al to provide improved control of the retractor that supports different operating modes.

Claim 14 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al in view of Yano et al and Fujii et al as applied to claims 7 and 13 above, and further in view of Midorikawa et al (U.S. Pat. No. 6,485,057).

Tanaka et al does not disclose making the second torque generating system gradually reduce the torque with lapse of time during winding as recited in claim 14. Tanaka et al does not disclose a webbing action detecting system that detects the webbing action by detecting a rotary speed and a rotary direction of the spindle as recited in claim 21.

Midorikawa et al teaches gradually reducing the torque of a seatbelt winding mechanism during winding (col. 51, lines 16-29) and teaches detecting system webbing action by detecting a rotary speed and a rotary direction of the spindle (abstract; S6903, Fig. 63; col. 67, lines 38-46; Figs. 72, 73; col. 81, lines 48-64; col. 82, lines 60-67).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to retract the seatbelt in Tanaka et al with gradually decreasing torque and to provide the retractor of Tanaka et al with a webbing action detecting system that detects the webbing action by detecting a rotary speed and a rotary direction of the spindle as taught by Midorikawa et al to prevent discomfort to the wearer during belt tightening and to make it possible to precisely control operation of the retractor.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al in view of Yano et al as applied to claim 1 above, and further in view of Midorikawa et al (U.S. Pat. No. 6,485,057).

Tanaka et al does not disclose making the second torque generating system gradually reduce the torque with lapse of time during winding.

Midorikawa et al teaches gradually reducing the torque of a seatbelt winding mechanism during winding (col. 51, lines 16-29).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to retract seatbelt in Tanaka et al with gradually decreasing torque as taught by Midorikawa et al to prevent discomfort to the wearer during belt tightening.

Response to Arguments

Applicants' arguments filed 12/21/10 have been fully considered but they are not persuasive.

Applicants argue that the tension in the spring in Tanaka is set at a higher level than required by claim 1 (pp. 13-14). However, this is not seen to be the case because Tanaka meets all the criteria set forth for the spring (first torque generating system) of claim 1. It has a predetermined torque (it and applicants' first torque generating system are springs) and is capable of the use recited in claim 1, lines 37-40 ("capable of positioning the seat belt for restricting a passenger seated in a seat without causing a substantial passenger's oppressive sensation caused by a fastened condition of the seat belt"). The limitation of claim 1, lines 37-40 specifies only intended use since it is not a function solely of the structure of claimed apparatus. E.g., it depends on the passenger. Claim 1 does not require that the torque generated by the first torque generating system is insufficient on its own to cause reliable retraction of the seatbelt webbing. Retractors are known that to not cause oppressive sensation in passengers and are capable of fully retracting under spring power. Further, Tanaka discloses a retractor including a spring that is not capable of fully retracting a webbing and a motor to assist retraction as in applicants' apparatus.

Applicants argue that Peter does not teach a retractor that avoids causing a substantial passenger's oppressive sensation caused by a fastened state of the seat belt (p. 15). However, Peter is relied upon for the teaching of a torque transmission cushioning system rather than avoiding a substantial passenger's oppressive sensation

caused by a fastened state of the seat belt. Tanaka meets this limitation as discussed above.

Applicants argue that Fujii does not teach the limitation that the torque generated by the first torque generating system is capable of positioning the seat belt for restricting a passenger seated in a seat without causing a substantial passenger's oppressive sensation caused by a fastened condition of the seat belt (p. 16). However, Fujii is relied upon for teachings related to a webbing action detecting system. Tanaka meets this limitation as discussed above.

Applicants argue that Midorikawa does not suggest that the spring has a preset torque setting capable of positioning the seat belt for restricting a passenger seated in a seat without causing a substantial passenger's oppressive sensation caused by a fastened condition of the seat belt (p. 17, last para.). However, Midorikawa is relied upon for other teachings, but does teach reduction of oppressive sensation. Tanaka meets this limitation as discussed above.

Applicants argue that Fujii does not teach that the rotation detecting unit 50 detects the rotational speed of the spool 2 (p. 20, last para.). However, this is not the case since 50 is disclosed as detecting variations in spool position so as to determine whether the spool has a finite speed or is stopped.

Applicants argue that Midorikawa does not detect webbing action by detecting a rotary speed and a rotary direction of a spindle (p. 21). However, note the abstract, S6903 in Fig. 63, col. 67, lines 38-46, Figs. 72 and 73, col. 81, lines 48-64, and col. 82, lines 60-67 of Midorikawa in which spindle speed and direction detection are disclosed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SCOTT HAUGLAND whose telephone number is (571)272-6945. The examiner can normally be reached on Mon. - Fri., 10:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mansen can be reached on (571) 272-6608. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael R Mansen/
Supervisory Patent Examiner, Art Unit 3654

/SJH/